



Pregnancy-Employee/Patient

Rule .1610

- (a) The licensee or registrant shall ensure that the dose to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 0.5 rem (5 mSv). Record keeping requirements for doses to an embryo/fetus are provided in Rule .1640.
- (b) The licensee or registrant shall make efforts to avoid substantial variation above a uniform monthly exposure rate to a declared pregnant woman so as to satisfy the limit in paragraph (a) of this rule.
- (c) The dose to an embryo/fetus shall be taken as the sum of:
 - (1) the deep-dose equivalent to the declared pregnant women; and
 - (2) the dose to the embryo/fetus from radionuclides in the embryo/fetus and radionuclides in the declared pregnant woman.

(d) If the dose to the embryo/fetus is found to have exceeded 0.5 rem (5 mSv) of this dose, by the time the woman declares the pregnancy to the licensee, the licensee shall be deemed to be in compliance with paragraph (a) of this rule, if the additional dose to the embryo/fetus does not exceed 0.05 rem (.5 mSv) during the remainder of the pregnancy. In recognition of the possibility of increased radiation sensitivity, and because dose to the embryo/fetus is involuntary on the part of the the embryo/fetus, this more restrictive dose limit has been established for the embryo/fetus of a declared pregnant radiation worker.

Rule .0104

As a rule the following definitions shall apply.

- (28) “Declared pregnant woman” means a woman has voluntarily informed the licensee or registrant, in writing, of her pregnancy and the estimated date of conception. The declaration remains in effect until the declared pregnant woman withdraws the declaration in writing or is no longer pregnant.
- (42) “Embryo/Fetal” means the developing human organism from conception until time of birth.

A number of studies have suggested that the embryo/fetus may be more sensitive to ionizing radiation than adults, especially during the first trimester of gestation. The National Council on Radiation Protection and Measurement (NCRP) has recommended that special precautions be taken to limit exposure when an occupationally exposed woman could be pregnant.

Genetic effects are those that affect the offspring of exposed persons, usually in the range of 20-200 rem. At normal exposure levels, genetic effects of radiation are negligible.

It is the responsibility of the Radiology employee to inform (declare) the supervisor that they may be pregnant, this declaration should be in writing, with estimated due date. Until there is a declaration of pregnancy, the occupational dose limits shall remain those guidelines set for adult employees.

Declaration of Pregnancy should include:

- Your name
- Estimated date of conception/or due date
- The date you signed the Declaration of Pregnancy
- To declare pregnancy, no documented medical proof is necessary.
- MUST BE IN WRITING**, This legally protects the employee and the employer

Once declaration of Pregnancy is signed:

Employee should be counseled by her supervisor and/or the RSO, to include:

1. Review of exposure history
2. Educational review on exposure levels for unborn children (maximum permissible dose, 0.5 rem) and fetal risk associated with exposure to radiation.
3. Discussion of employees work schedule, supervisor, RSO or employee may ask for reassignment to minimize exposure.
4. Supply Declared pregnant worker with a monitor for fetal dose.

Availability of additional information

Rule .1640 Record Keeping

- (f) The licensee or registrant shall maintain the records of dose to an embryo/fetus with the records of dose to the declared pregnant woman. The declaration of pregnancy shall also be kept on file, but may be maintained separately from dose records.

The general principles for maintaining exposure to radiation as low as reasonable achievable are time, distance and shielding.

Decrease your time near radiation source, increase your distance from the radiation source, and increase the shielding between you and the radiation source.

For Patients who may be pregnant

All patients in their reproductive years between 12 and 45 should be questioned as to the possibility of pregnancy. This should be done as sensitively and unobtrusively as possible, in keeping a woman's privacy and dignity in tact. If there is the possibility that pregnancy is likely, the Radiologist should be notified and a pregnancy test should be recommended.

If the patient is pregnant:

Attending/referring physician should be notified

Physician should decide if x-ray is necessary at this time

If needed, patient must be thoroughly informed of risks associated with radiation and the embryo/fetus- the decision for x-ray-s exam must be left up to the patient.

If the patient decides to proceed with the x-ray examination, the patient should be shielded, shielding shall be documented and a signed waiver should be obtained. If the exam is in the abdominal region, a modified x-ray exam may be necessary, consult with the physician and/or RSO

Rule .1611 The Lower limit for declared pregnant radiation worker is 0.5 rem, but for the general population the limit from licensed or registered operations is not to exceed 0.1 rem (1 mSv) in a year.

The risk to embryo/fetus from 0.5 rem or even 5 rem of radiation exposure is relatively small compared with some other avoidable risk, such as alcohol consumption and cigarette smoking.

The following list, suggest sources of useful information:

U.S. Nuclear Regulatory Commission Headquarters
Radiation Protection & Health Effects Branch
Office of Nuclear Regulatory Research
Washington, DC 20555
301-415-6187

Department of Health and Human Services
Center for Devices and Radiological Health
1390 Piccard Drive, MS HFZ-1
Rockville, MD 20850
301-443-4690

U.S. Environmental Protection Agency
Office of Radiation and Indoor Air
Criteria and Standards Division
401 M St. NW
Washington, DC 20460
202-233-9290

For Poster: “Pregnant? Or think you might be? Tell your Doctor before getting an x-ray or prescription”.
HHS Publication FDA78-1045 and Brochure: “X-rays, Pregnancy and You...” HHS Publication FDA 79-8087.

Contact:

Washington State, Department of Health
X-ray Control Section
Post Office Box 47827
Olympia, WA 98504-7827